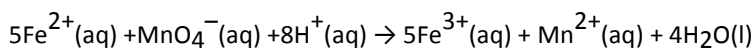


T09D01 – 9.1-2 Practice

Name.....

1. Consider the following redox equation.



- (i) Determine the oxidation numbers for Fe and Mn in the reactants and in the products.

(2)

- (ii) Based on your answer to (i), deduce which substance is oxidized.

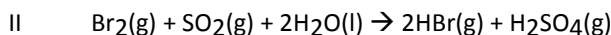
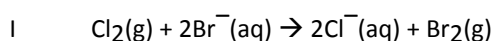
(1)

- (iii) The compounds CH_3OH and CH_2O contain carbon atoms with different oxidation numbers. Deduce the oxidation numbers and state the kind of chemical change needed to make CH_2O from CH_3OH .

(3)

(Total 6 marks)

2. Two reactions occurring in the manufacture of bromine from sea water are



- (i) Explain, by reference to electrons, why reaction I is referred to as a redox reaction.

(2)

- (ii) State and explain whether SO_2 is reduced or oxidized in reaction II by referring to the oxidation numbers of sulfur in this reaction.

(3)

(Total 5 marks)

3. Iron in food, in the form of Fe^{3+} , reacts with ascorbic acid (vitamin C), $\text{C}_6\text{H}_8\text{O}_6$, to form dehydroascorbic acid, $\text{C}_6\text{H}_6\text{O}_6$.

- (i) Write an ionic half-equation to show the conversion of ascorbic acid to dehydroascorbic acid in aqueous solution.

(1)

- (ii) In the other ionic half-equation Fe^{3+} is converted to Fe^{2+} . Deduce the overall equation for the reaction between $\text{C}_6\text{H}_8\text{O}_6$ and Fe^{3+} .

(1)

(Total 2 marks)

Directions: 1st Assign oxidation number for each “element”; 2nd write each half equation; 3rd make sure that the electrons lost in oxidation are gain by that being reduced; 4th balance the equation using your ratios from step #3.

